

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

GEODYNAMICS, INC.,

Plaintiff,

v.

DYNAENERGETICS US, INC.,

Defendant.

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No. 2:17-CV-00371-RSP

MEMORANDUM OPINION AND ORDER

In this patent case, the Court now considers Dynaenergetics US, Inc.’s Motion for Summary Judgment of Invalidity of the ’394 Patent as Lacking Proper Written Description [Dkt. # 109]. After considering the parties’ briefs on the issue¹ and the controlling case law, the Court concludes that a reasonable factfinder could determine that the written description requirement was met, so the Court will DENY this Motion.

I. BACKGROUND

Plaintiff GEODynamics, Inc. (“GEOD”) owns U.S. Patent No. 8,220,394 (“’394 Patent”). Compl. [Dkt. #1]. A Great Britain patent application was filed on October 10, 2003, and this patent application resulted in the ’394 Patent. ’394 Patent at [30]. The ’394 Patent relates to a reactive shaped charge liner that may be used within a perforator for perforating and fracturing well completions. *Id.* at 1:5–7. The liner is placed within a housing, and highly explosive material is located within the volume enclosed between the liner and the housing. *Id.* at fig. 1, 7:15–16. A recess within the housing allows for the activation of the highly explosive material. *Id.* at 7:16–20.

¹ A Response from GEOD [Dkt. #150], a Reply from DYNA [Dkt. #167], and a Sur-Reply from GEOD [Dkt. #186] have also been filed.

Upon activation of the highly explosive material, the material causes the reactive shaped liner to have an exothermic reaction that helps further distress and fracture well completions. *Id.* at 6:6–8.

GEOD accuses Dynaenergetics US, Inc. (“DYNA”) of infringing claims within the ’394 Patent. Proposed Final Pretrial Order at 9 [Dkt. #203]. DYNA contends that the ’394 Patent is invalid because it lacks proper written description. Def’s Mot. DYNA raises this challenge for two different terms within claim 1 of the patent: (A) the “respective proportions” term, and (B) the “further inert metal” term. *Id.*

A. Background Related to the “Respective Proportions” Term

Claim 1 of the ’394 Patent requires that “at least two metal elements” are present that “will undergo an intermetallic alloying reaction.” ’394 Patent at 7:64–8:11. “[T]he at least two metal elements are provided in respective proportions calculated to give an electron concentration of 1.5” *Id.* at 8:4–6. The specification mentions nickel and aluminum as possible metal elements that could be used. *Id.* at 3:16–27.

GEOD presented Dr. Gary Wooley as an expert for the written description issues. Wooley Rebuttal Rep. [Dkt. #150-3]. Wooley stated his opinion that “the inventor of the ’394 patent had in his possession the invention of making any amounts of NiAl.” *Id.* at ¶ 133. He first discusses the information included within the specification:

The specification of the ’394 patent explains that, although stoichiometric ratios may be preferred, “ratios other than a stoichiometric ratio may also afford an exothermic reaction and as such the invention is not limited to stoichiometric mixtures.” The ’394 patent’s specification says that the primary aspect of the invention relates to “a composition capable of an exothermic reaction upon activation of the shaped charge liner.” The specification goes on to describe that “[t]he liners give particularly effective results when the two metals are provided in respective proportions calculated to give an electron concentration of 1.5”

Id. at ¶ 132 (internal citations omitted). Wooley provided his opinion based on what was disclosed in the specification:

Based on these disclosures, it is my opinion that a person of skill in the art at the time of the invention, upon reading the specification, would understand that the inventor of the '394 patent had in his possession the invention of a reactive liner composition that creates an intermetallic compound with an electron concentration of 1.5 (such as NiAl) upon detonation of the shaped charge. A person of skill in the art would understand that the inventor of the '394 patent had in his possession the invention of making any amounts of NiAl. Indeed, if one could create significant amounts of NiAl based solely on the composition of the liner, one would necessarily be able to make small amounts of NiAl by altering the liner blend. A person of skill in the art at the time of the invention would understand this and would understand that the inventor had in his possession a liner composition that formed, in any amount, an intermetallic product with an electron concentration of 1.5 upon activation of the shaped charge. Therefore, it is my opinion that there is sufficient written description support for the scope of the “respective proportions” limitation as defined by the Court.

Id. at ¶ 133–34.

Wooley was asked about the written description issue at his deposition. Wooley Tr. 210:6–211:7. When asked whether “the patent here describe[s] the use of NiAl to produce a considerable output of energy,” Wooley stated “[a]s an example.” *Id.* at 210:16–18. When asked whether he could “identify a portion of the patent . . . that describes the use of NiAl to produce a trivial amount of energy,” Wooley stated, “I don’t think those words are in the patent.” *Id.* at 210:19–24. When asked if he could “identify a portion of the patent that describes the use of NiAl to produce insufficient energy to impact the flow characteristics of the perforation tunnel, Wooley stated, “I think you’re making all that stuff up. I don’t think those words are in the patent, nor should they be.” *Id.* at 211:1–7.

B. Background Related to the “Further Inert Metal” Term

Claim 1 of the ’394 Patent requires that the liner composition “further comprises at least one further inert metal, wherein the at least one further inert metal is not capable of an exothermic reaction with the at least two metal elements upon activation of the shaped charge liner.” ’394 Patent 8:7–11.

Wooley states his opinion that “the ’394 patent provides sufficient written description support for the ‘further inert metal’ limitation.” Wooley Rebuttal Rep. at ¶ 136. He first discusses the information included within the specification:

[T]he specification plainly states that “[i]n an alternative arrangement it may be desirable that the liner further comprises at least one further metal, where the at least one further metal does not participate in the exothermic reaction when the shaped charge is activated.” The ’394 explains that the further inert metal “may be selected from any commonly used or known shaped charge liner metal,” including, for example, tungsten. The specification of the ’394 patent goes on to demonstrate the inventors’ familiarity with the properties of inert metals like tungsten, stating that such metals are “commonly used or known shaped charge liner metal[s].” The inventors also explain that a person of skill in the art would understand that inert metals, like tungsten, are included in the liner to “provide additional mechanical strength to the liner and thus to increase the penetrative power of the jet.” Further underscoring the inventors’ familiarity with inert metals is the observations that “[t]he properties of tungsten and copper as shaped charge liners are well known and they are typically used as liner materials due to their high density and ductility, which traditionally make them desirable materials for this purpose. In view of the “mechanical strength,” “high density,” and “ductility” of the traditional inert metals known to those skilled in the art, such as tungsten, the inventors of the ’394 patent explained that “it may further be desirable to incorporate a portion of either copper or tungsten or an alloy thereof, into the reactive liner of the invention in order to provide a reactive liner of increased strength and hence a more powerful jet.”

Id. at ¶ 138–40 (internal citations omitted). Wooley provided his opinion based on what was disclosed in the specification:

This disclosure highlights the inventors' understanding that the power of the jet is tied to the inclusion of an inert metal in the liner. . . . As a person of skill in the art, I understand this disclosure demonstrates the manifest that the inert "portion" of the liner is absolutely critical to the strength, power, and effectiveness of the patented shaped charge. . . . [N]othing in the '394 patent's specifications suggest that the inventors were in possession of only reactive liners with relatively low amounts of inert metals. In fact, these disclosures highlight the critical benefits of inert metals—tying the liner's strength and the jet's power to the inclusion of inert metals.

Id. at ¶ 140–41.

A second Great Britain patent application was submitted on February 20, 2007, and this application eventually resulted in the grant of the U.S. Patent No. 8,544,563 ("563 Patent"). '563 Patent at [30]. Claim 1 of the '563 Patent requires reactive metal liners with a "further metal" that was "not capable of an exothermic reaction." *Id.* at 13:40–46. The claim also requires that the further metal is "present in an amount greater than 40% w/w of the liner." *Id.* Further, the specification states that performance results were "very surprising" for liners with 70% tungsten, *id.* at 12:24–52, and that liners with "greater than 40% w/w" of the further metal are preferable, *id.* at 9:61–63.

The application for the '563 Patent was originally assigned to QinetiQ Ltd. ("QinetiQ"). *Id.* at [73]. During the prosecution of the '563 Patent application, the examiner rejected certain claims of the application as obvious based on published international patent application that led to the grant of the '394 Patent. Office Action to '563 Patent application [Dkt. #109-4]; '394 Patent at [87]. In response to this rejection, QinetiQ argued to the examiner:

although the use of at least one further metal to increase the depth penetration is known — it is a totally unexpected and counterintuitive result that at high inert metal inclusions (in excess of 40% w/w), when the amount of reactive ingredients is necessarily lower, the tunnel will remain debris free.

June 20, 2012 Amendment at 10 [Dkt. #109-5].

The '563 Patent was eventually granted, but it was eventually challenged in an *inter partes* review proceeding with the '394 Patent and the applications leading up to it being asserted as prior art references. Def.'s Mot. at 6. In preparation of this proceeding, a QinetiQ employee named Philip Church opined that the '563 Patent was a "highly non obvious development" because of the large delay between the priority dates for the '394 Patent and the '563 Patent. Church Decl. at 19:18–27 [Dkt. #109-6]. He stated that it would be especially non-obvious to include about 70% of a further metal that was not reactive. *Id.* at 23:9–26. Church stated that certain testing was not performed until "around about 2005," *id.* at 24:7–10, and DYNA contends that this was the first time high-tungsten reactive liners were tested, Def.'s Mot. at 7.

II. APPLICABLE LAW

Patents are presumed to be valid. 35 U.S.C. § 282(a). However, the decision regarding patentability by the USPTO is not binding on a court. *Fromson v. Advance Offset Plate, Inc.*, 755 F.2d 1549, 1555 (Fed. Cir. 1985). The presumption regarding validity may be overcome by clear and convincing evidence of invalidity. *Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1374 (Fed. Cir. 2001).

Section 112 of the Pre-AIA Patent Act states that "[t]he specification shall contain a written description of the invention. . . ." To satisfy the written description requirement, the disclosure must "convey[] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc)). A proper written description inquiry focuses on "whether the patentee has provided an adequate description that 'in a definite way identifies the claimed invention' in sufficient detail such that a person of ordinary skill would understand that the inventor had made

the invention at the time of filing.” *Allergan, Inc. v. Sandoz Inc.*, 796 F.3d 1293, 1308 (Fed. Cir. 2015). The “hallmark of written description is disclosure,” so the test for written description requires an “objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art.” *Id.* The written description determination focuses on the “disclosures of the applications,” and information that is not part of the asserted patent’s specification “should not form the basis of the written description inquiry.” *Id.* at 1309. No rigid requirement exists that the disclosure contain either examples or an actual reduction to practice. *Id.* at 1308.

“The court shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a). Evidence is construed in the light most favorable to the non-moving party, and all reasonable inferences are to be drawn in that party's favor. *R & L Inv. Prop., L.L.C. v. Hamm*, 715 F.3d 145, 149 (5th Cir. 2013) (citing *Griffin v. United Parcel Serv., Inc.*, 661 F.3d 216, 221 (5th Cir. 2011)). A factual dispute is genuine only where “the evidence is such that a reasonable jury could return a verdict for the nonmoving party.” *Amgen Inc. v. Conn. Ret. Plans & Tr. Funds*, 568 U.S. 455, 480 (2013) (citing *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247–48 (1986)). “Compliance with the written description requirement is a question of fact but is amenable to summary judgment in cases where no reasonable fact finder could return a verdict for the nonmoving party.” *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1307 (Fed. Cir. 2008).

III. DISCUSSION

DYNA fails to show that no reasonable fact finder could return a verdict for the nonmoving party for both issues. GEOD presents Wooley as an expert who qualifies as a person of skill in the art. In responding to this motion, the Court must view the evidence in a light most favorable to

GEOD since it is the non-moving party. Accordingly, the Court accepts that Wooley qualifies as a person of skill in the art for the purposes of responding to DYNA's motion. Wooley provided his opinion as to the written description inquiry for both claim terms. Based on the information contained within the specification of the '394 Patent and Wooley's opinion, a reasonable factfinder could determine that the written description requirement was satisfied for the "respective proportions" and "further inert metal" claim terms.

A. A reasonable factfinder could conclude that the written description requirement was met for the "respective proportions" claim term.

Wooley presents his opinion that "the inventor of the '394 patent had in his possession the invention of making any amounts of NiAl." Wooley Rebuttal Rep. at ¶ 133 [Dkt. #150-3]. His inquiry focuses on the specification of the patent. *See id.* at ¶ 132. He provided his reasoning, stating that "if one could create significant amounts of NiAl based solely on the composition of the liner, one would necessarily be able to make small amounts of NiAl by altering the liner blend." *Id.* at ¶ 133.

DYNA fails to show how a reasonable factfinder could not agree with Wooley's position. Attempting to undermine Wooley's position, DYNA points to Wooley's deposition. When asked whether he could "identify a portion of the patent . . . that describes the use of NiAl to produce a trivial amount of energy," Wooley stated, "I don't think those words are in the patent." Wooley Tr. at 210:19–24. When asked if Wooley could "identify a portion of the patent that describes the use of NiAl to produce insufficient energy to impact the flow characteristics of the perforation tunnel," he stated "I think you're making all that stuff up. I don't think those words are in the patent, nor should they be." *Id.* at 211:1–7. Based on Wooley's responses, DYNA argues that "Wooley admitted that the '394 patent does not disclose "respective proportions" of nickel and aluminum that produce any and all amounts of NiAl. Therefore . . . the inventors of the '394

[patent] were not in possession of the full range of the claimed subject matter.” Def.’s Mot. at 5 (internal citations omitted). However, by saying “I don’t think those words are in the patent,” Wooley is merely stating that the ’394 patent is silent as to that precise language. No rigid requirement exists that the disclosure contain specific examples to satisfy the written description requirement, *Allergan*, 796 F.3d at 1308, and DYNA itself conceded that “[w]hether silence implies possession depends on the knowledge of one skilled in the art.” Resp. at 1 n.1.

Based on the evidence in the record, a reasonable factfinder could determine that a person of skill in the art would view the inventors of the ’394 Patent as having possession of respective proportions of nickel and aluminum that produce even trivial amounts of NiAl. Accordingly, the Court will DENY this motion as it relates to DYNA’s “respective proportions” argument.

B. A reasonable factfinder could conclude that the written description requirement was met for the “further inert metal” claim term.

DYNA’s argument focuses on information from the Inter Partes Review of the ’563 Patent and the prosecution of the patent application that led to the ’563 Patent. Def.’s Mot. at 1. The test for written description requires an “objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art.” *Allergan*, 796 F.3d at 1308. DYNA’s arguments largely focus on evidence that is outside the four corners of the patent specification, and this evidence “should not form the basis of the written description inquiry.” *Id.* at 1309. The Court will not rely on evidence presented relating to the prosecution or Inter Partes Review of the ’563 Patent.²

² DYNA argues that “when a specification is silent regarding matter falling within the scope of a claim, a court reviewing a written description challenge must consider extrinsic evidence, such as evidence regarding ‘the complexity of the technology.’” Resp. at 1 n.1. DYNA cites to *Streck* to support this proposition. *Streck* states that “[t]he level of detail required to satisfy the written description requirement depends, in large part, on the nature of the claims and the complexity of the technology.” *Streck, Inc. v. Research & Diagnostic Systems, Inc.*, 665 F.3d 1269, 1285 (Fed. Cir. 2012). The Court disagrees with DYNA’s interpretation of *Streck* and fails to see how this sentence supports opening up the inquiry to extrinsic evidence.

From what is included in the specification regarding a “further inert metal,” a reasonable fact finder could return a verdict for GEOD. The specification states that an alternative arrangement exists where “at least one further metal does not participate in the exothermic reaction” and that this additional metal is considered inert. ’394 Patent at 5:43–46. The specification states that the “purpose of adding a further metal is to provide additional mechanical strength to the liner and thus to increase the penetrative power of the jet,” and it also identifies tungsten as a well-known and desirable material for this purpose. *Id.* at 5:49–55. No specific amount of inert metal is required by the claims or identified within the specification.

Wooley’s Rebuttal Report provides insight into how a person having skill in the art might view the written description inquiry. In his reading of the specification, Wooley understands that the “further inert metal” “is absolutely critical to the strength, power, and effectiveness of the patented shaped charge” and that “the liner’s strength and the jet’s power [are tied] to the inclusion of inert metals.” Wooley Rebuttal Rep. at ¶ 141. He also states that “nothing in the ’394 patent’s specifications suggest that the inventors were in possession of only reactive liners with relatively low amounts of inert metals.” *Id.*

The test for written description is whether the disclosure “conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad*, 598 F.3d at 1351. Here, Wooley has presented his opinion that the inventors of the ’394 Patent were in possession of liners with high amounts of “further inert metal.” Between the language included within the specification and Wooley’s opinion, a reasonable factfinder could determine that a person of skill in the art would view the inventors of the ’394 Patent as having possession of liners with a high amount of “further inert metal.” Accordingly, the Court will DENY this motion as it relates to DYNA’s “further inert metal” argument.

IV. CONCLUSION

The Defendant DynaEnergetics US, Inc.'s Motion for Summary Judgment of Invalidity of the '394 Patent as Lacking Proper Written Description is DENIED.

SIGNED this 27th day of September, 2018.



ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE